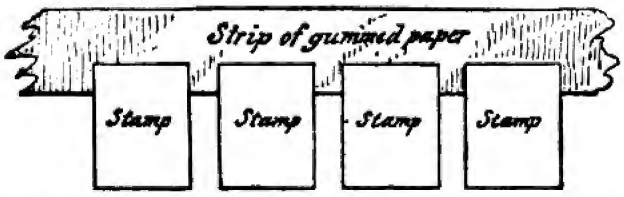
our advice would be, therefore, to use books made of heavy paper, with perfectly blank pages. On these the stamps may be arranged to suit the collectors' fancy.

The principle of mounting the stamps now adopted by amateurs is that known as hingeing. Several methods have been advocated, but the one we name is superior to all others in convenience and adaptation to the purpose. First, then, as to the paper used for the hinges. There is a kind of fine, foreign letter paper, strong, thin, and almost transparent, called by stationers "onion-skin," which answers the best. Sheets of this should be washed on one side only with a weak solution of pure gum arabic, just thick enough to flow easily, and to not crack when dried. The sheets, when dry, must be cut into strips of about one-half inch in width. The stamps, having been freed from all adhering paper, should be placed side by side on the strip, one edge of which has been previously moistened to the depth of one-eighth inch, as illustrated in the following figure:



Then, with a pair of scissors, separate the stamps, and trim the adhering portion of the strip, when it should look like the following:

Fold the strip backward upon itself, and by the application of a little water from a camel's-hair brush, the stamp is ready to be placed in position. The great advantage of this plan lies in the fact that a stamp once mounted can be easily removed from the page without injury to stamp or page, by moistening the hinge, the paper being so thin that a slight touch of water will loosen the hinge from the page.

A word or two on the subject of counterfeits may not be amiss. Stamp-dealing is quite a lucrative pursuit, and the profits are certainly large enough to induce the dealer to sell only genuine stamps; it is a sad fact, however, that many persons counterfeit nearly every rare stamp, and palm off their cheat upon the young collector, and even upon the experienced amateur, as a valuable original.

Young collectors should be careful to collect none but genuine postage-stamps, and to have no dealings except with respectable and honest persons.

TRIP AND TOM.

By J. B L.

'LET 's do it," said Trip.

"Let 's," said Tom; and two little white figures popped out of bed.

What could they be up to? Not ten minutes before, they had repeated "Now I lay me down to sleep," and received mamma's good-night kisses. Yet now here they were, drawing on stockings and shoes, aprons and coats, and acting decidedly as if "to sleep" was the last thing they had lain down to do.

The "Swiss Family Robinson" was at the bottom of the mischief. Eight-year-old Miss Trip had just devoured that story of delightful adventure, and six-year-old Tom had listened admiringly to her narrations and entered heartily into her plans.

An early and secret leaving of the paternal roof, in search of personal adventure, was the project with which Trip's busy brain had teemed all day. To accomplish this more successfully, they had decided to re-dress.

When mamma looked in upon them before retiring, instead of two white-robed children, there was Tom in his top-boots, trousers, and coat; Trip with her dress half-buttoned, her shoes on the wrong feet, her apron fastened at the top; and

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over all, tightly clutched in four little hands, was the bed-spread, drawn up to hide from mamma's prying eyes anything curious below. Mamma understood at a glance.

"Let 'em go," said papa, in answer to a "what shall I do?" "They wont go far, and they 'll find out for themselves how much fun there is in it."

So two uncomfortably dressed children tossed and tumbled all night.

"I 've wondered all day what Trip was up to," said mamma.

"She 's been making preparations, I guess. We shall find her provisions hidden away somewhere."

A little search brought to light, under the bed, the family valise and market basket. In the valise were a pillow, a blanket, a knife, two forks, one plate, a teacup, a coffee-pot that had suffered the loss of a nose, a syrup pitcher, a spoon, Trip's work-box, "Mother Goose's Melodies," an old jacket, two dolls, two aprons, and a neck-ribbon. In the basket were some cold corn-bread, a tiny bag of flour, some salt, a huge paper of saleratus, a parcel of sugar, two beets, a turnip, a dozen raw potatoes, and a slice of uncooked ham.

On the floor lay Tom's agricultural implements and weapons of war,—his spring-gun, his glittering sword of tin, a tiny hoe, a hatchet with a split clothes-pin for a handle, and a four-bladed jack-knife (that is, one that had long ago been four-bladed, but, as far back as Tom's memory went, one very rusty, very jagged, and very short blade was all it could boast).

The early dawn found Trip and Tom astir.

"It 's dark," said Tom.

"Oh, come on!" said Trip.

"It 's all smoky," said Tom, looking dubiously out into the dull gray of the early morning.

"Oh, Tom Nelson! If I would n't be ashamed to back out! Come! You take the basket, and I 'll carry the bag," said Trip.

Clatter, clatter, bump, bump, and Trip and Tom, basket and bag, were down-stairs, through the hall, out of doors.

Mamma cautiously peeped from her window and saw two wretched little figures, in the mist of an uncomfortable, drizzling morning, starting out toward the great elm in the back-yard.

Trip staggered along under the weight of her valise, dragging an umbrella behind her; while Tom brought up the rear, his gun slung over his shoulder, his sword dangling from a clothes-line belt, his hoe and hatchet carried *à la* tomahawk, and his precious knife in the deepest recess of his deepest pocket.

Mamma Nelson dressed herself and two-year-old Katie, who had not been taken into the conspiracy on account of her inexperience and extreme youth, and went down-stairs to be ready for developments.

"Rap, rap!" at the door.

"Mum," said a small voice, making desperate attempts to speak *large*, "can you lend me a few kindlings this morning?"

"Certainly, sir, certainly," said mamma, briskly. "Very happy to accommodate you. You are moving, I see!"

"Shipwrecked," said Tom in a deep bass, glancing at the griddle-cake preparations for breakfast, as if famine were added to the ordinary horrors of shipwreck.

ON THE DESERT ISLAND.

"An unpleasant morning for your furniture to be exposed," said sympathetic mamma.

"Goin' to build a house," said Tom, disappearing with his kindlings.

"Rap, rap!"

"I would like to retain a few matches, if you please, ma'am," said the smooth voice of Trip, whose curious mixing of the Queen's English was

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the family joke. "My stove don't draw well, and I can't exceed in starting a fire."

"I suppose you lost your flint and steel in the wreck, and a sun-glass is a failure such a cloudy morning."

"Yes, ma'am," said Trip, glancing at the griddle-cakes.

Mamma slyly helped little Katie to an extra nice-looking one, just as two hungry-looking black eyes gave their last backward glance.

Trip put some more kindlings into or under her primitive stove, which certainly bore much more resemblance to the fire-places our great-grandmothers loved than to the cooking-stove in her mother's kitchen.

Tom looked solemnly into the battered tin pail, in which six grimy potatoes were supposed to be cooking.

"It's a nasty old thing!" said Tom, crossly. "They wont never cook 'n the world."

"Well, we can eat our brown bread if they don't, and put lots of sugar on it, too," said Trip, philosophically, her eight-year-old pride rebelling against giving up her pet plan.

So the children spread their umbrella, and sat down to wait for breakfast.

"Oh, Tommy! see these dear little incident birds!" said Trip, vainly endeavoring to cheer the drooping spirits of her fellow-adventurer. "Aint they pretty?"

"No, they aint," said Tom, snappishly. "Their backs are all humped up, and they can't walk,—they just hop, hop!"

"Let's tell stories," said Trip, beginning without waiting for Tom's assent: "Once there was a beautiful princess, and she lived in a beautiful palace, and a wicked witch did n't like it, and she put some dreadful stuff into the water that the min'ster sprinkled on her, and she could n't walk on the ground, but they had to fly her, just like a kite."

"Oh, what a stor-ee, Trip Nelson! Now I shall tell mamma!" said Tom, with virtuous indignation.

"No you wont, either! 'T aint a story. Mamma's book said so!" said Trip, whose good-nature, like many an older housekeeper's, was not quite proof against the combined misfortunes of domestic experience and the growling masculine element in the domestic atmosphere.

"My feet are all wetted, and my froat 's sore," said Tom, beginning to whimper, "and I want some griddle-cakes, too."

"Well, Tommy," said Trip, "don't you cry. We 'll play there 's a ship in sight, coming to take us off, and then we 'll run home, and s'prise mamma, and get some breakfast, too. I 'll shake my apron, to make 'em see us, and you scream 'Ship ahoy!' just as loud as you can."

But, alas! what solitary, uninhabited corner of the globe ever was free from some dangerous monster? Lions prowl around, tigers spring upon their unwary prey, and terrible cannibals silently approach.

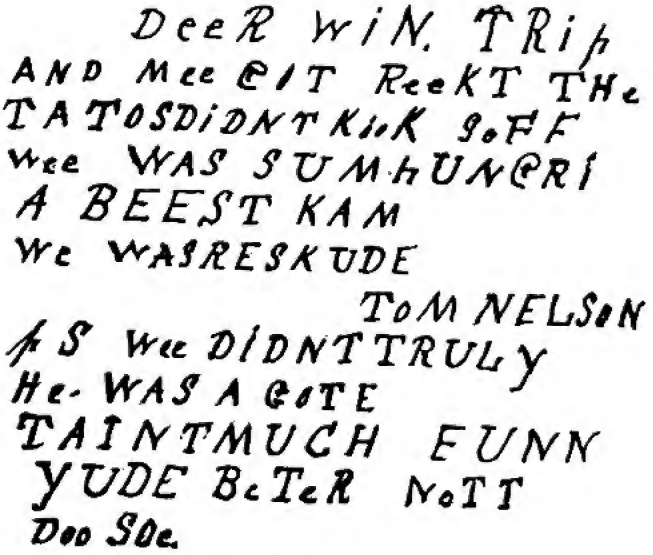
So just behind our little adventurers stood a threatening foe. Old Billy, the neighbor's goat, had passed some minutes in quiet examination of that strange object under the elm.

All of a sudden—rush, whang!—and two frightened children were tumbled over on their faces, while poor Billy and the umbrella had it all to themselves.

Tom screamed lustily, according to the programme, and Trip stopped signaling and joined in the screaming. In a moment, mamma hove in view, bearing down gallantly to the rescue of the distressed family.

Soon after, two little children, with dry shoes and stockings, very happy faces, and very empty stomachs, might have been seen stowing away a sufficient quantity of provision, in the form of smoking and well-buttered griddle-cakes, to last through any ordinary experience of shipwreck and famine.

Here is Tom's letter to his dear friend Winchester Hardy, telling what he thought about his recent dangerous experience:



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SOMETHING ABOUT RAILROADS.

By Major Traverse.

Once an American lady in Baalbec, in Syria, saw a native at work on one of the mud-built houses, for though the ancient city of Baalbec was so splendid that it was called "the City of the Sun," the modern town is built mainly of mud. The lady asked the native why he did not build grand temples and splendid columns, like those in ruins. The man shook his head, and replied that such work could not be done by men.

"Why not?" asked the lady. "Those temples were built by men."

"Oh, no," said the Syrian; "by the genii."

"The genii!" exclaimed the lady, laughing. "Why, are the genii idle now?"

"They have gone," replied the Syrian, seriously. "They have gone toward the setting sun, where they build greater houses than these, bridge streams, bore through mountains, run through water and fly over the land, carrying people as swift as the wind, and letters as quick as lightning."

The lady smiled at the singular idea of the poor native, though there was much more to reflect upon than to laugh at in what he had said.

One of the great, good genii of this age is certainly the Civil Engineer. I often wonder if the children who cease work or play to watch a passing railway-train, ever think of the great changes which have been brought about by the building of railways.

George Stephenson, who is now justly called the "father of railways," was the child of poor parents in England. Unable to send him to school, they employed him at home as a nurse for the younger children until he was eight years old. His chief duty as nurse was to keep his little brothers and sisters from under the hoofs of the horses which drew the coal-cars on the "tram-way"—a wooden railroad leading from a coal-mine, which ran near his father's door. At this early age, while watching the coal-trains passing, he conceived the idea that iron would make better rails than wood, and that if he could put upon wheels the steam-engine which his father tended as fireman at the coal-pit, it could be made to draw as heavy a train of coal-

YOUNG GEORGE THINKS IT OVER.

cars as could be moved by a great team of fifty horses.

The idea did not pass away from the brain of George Stephenson when he was removed from his home at nine years of age, and hired out, at four cents a day, to tend the cows of a neighboring farmer. He had enough of leisure while watching the herd in the field to think over the subject. He even built him an engine of clay, with hemlock branches for steam pipes. I suspect that, like Little Boy Blue, he sometimes let the cows stray into forbidden meadows while he sat thinking about en-

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gines on wheels and roads of iron. He could not study about them in books for two very good reasons. In the first place, no books about railroads and locomotives had been printed, since neither had been built. The other reason was that George Stephenson could n't read at all. He did not know his alphabet until he was nineteen years old.

Little George, or "Geordy," as the common people nicknamed him, was next employed to drive the horse which turned the winding machine, or "gin," as the colliers called it, at the coal-pit where his father worked. He then began to think of a plan for making the steam do the work of the horse, and one day astonished the colliers by building on a bench, in front of his father's cottage, a model in clay of an engine which turned the "gin" and lifted the coal. He was at this time so young and small that his father made him hide when the owner of the coal-mine went "the rounds" to pay his hands, for fear he should think him too small to receive sixteen cents a day wages!

It was not until he was nineteen years old, and was set to watch an engine, that he found time to attend school and learn to read and write. He worked steadily at his old idea for twenty-five years. He made the first locomotive with smooth driving-wheels. It had been thought necessary by some engineers to construct locomotives with cogged driving-wheels, and a corresponding rack on the rail, to prevent the wheels from slipping. But Stephenson successfully set aside all these contrivances. He was nearly fifty years old before he found men willing to risk their money in constructing an iron railroad to test his locomotive. When, at length, the first railroad was completed, between Stockton and Darlington (two English towns only twelve miles apart), the procession with which the day was celebrated was headed by a man on horseback, to keep the road clear for Stephenson's locomotive and car, and ladies and gentlemen on horseback and in carriages kept pace with the train by riding by the side of the track. But after the procession had proceeded a short distance, Stephenson, who was running his own engine, impatiently called to the horseman to get out of the way, and, putting steam on, he ran his locomotive the rest of the distance at the terrible pace of twelve miles an hour!

GEORGE SHOWING HIS MODEL TO THE COLLIERS

Stephenson had been called a lunatic when he had said that his locomotive could run twelve miles

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an hour. One very distinguished officer of the English Government, whose duty it was to see that the mails were carried as rapidly as possible, laughed at the idea, and said that "if ever a locomotive ran ten miles an hour with a mail-bag behind it, he would eat a stewed engine-wheel for his breakfast."

There was some little excuse for this disbelief, for the first locomotive was a very clumsy machine. It was called the "Locomotion." Stephenson, when he built it, was the only man besides his son Robert who believed it would go at all; and some of the learned members of the English Parliament declared that it could not run against a strong wind! It was a small, clumsy affair, weighing not more than one-fifth as much as an engine of the present time.

The first improvement on it—the "Rocket"—was even more ridiculous in appearance; but it was found to be faster and stronger. Before it was accepted by the railroad company, it was put in a race with three other engines manufactured by other engineers; and of the judges and thousands of persons who witnessed the race, "nine-tenths were against the 'Rocket,' because of its appearance." But Stephenson received the prize over the other competitors, one of whom was Captain John Ericsson. His locomotive could run fifteen miles an hour, and once actually drew thirteen tons at a speed of twenty-nine miles an hour. That performance decided the fate of locomotives, and engineers at once went to work to improve the new motive power.

The first railroad passenger-car was simply an old box on wheels, with seats running along the sides, a door at the rear end, and a seat in front for the driver, like the box of an omnibus. It was called by Stephenson, who invented it, the "Experiment," because it was not generally believed that people would travel on the railway. In 1825, about the time the first line was finished, one of the principal papers of England said that nothing could be "more ridiculous than the prospect of locomotives traveling twice as fast as stage-coaches!" And it added that people would as soon "suffer themselves to be fired off upon one of Congreve's rockets as trust themselves to the mercy of such a machine going at such a rate." Stephenson, however, firm in his belief that passengers would travel by rail, declared that the time would come, and he hoped to live to see it, when it would be cheaper for a poor man to ride than to walk. This prophecy threatens to be more than fulfilled in a few years. It is proposed in England to send passengers by rail at ordinary English letter-rates, and under a system of tickets like postage-stamps—a six-cent stamp entitling the holder to go by any route to any part of Great Britain. But George Stephenson was not believed then, and the people continued to call him "Daft Geordy," which means "Crazy George." It was not long after the Stockton and Darlington road was opened that more passenger-cars were needed. The first improvement on the "Experiment" was a double car, made out of two "mourning-coaches." This car was lighted at night by a single candle.

Of course the owners and drivers of the stage-coaches and road-wagons bitterly opposed the building of the railway. They claimed that stage-coaches were not only safer but swifter than the cars, and often tried to prove it by racing. One day a race came off between Stephenson's locomotive, drawing a passenger-train, and one of the old stage-coaches which ran between Stockton and Darlington. They ran for a distance of twelve miles, and the locomotive beat the stage-coach by about one hundred yards. After this the proprietors of the stage-coaches were ruined, and their coaches were sold to the railroad company, who put new wheels on the old bodies and made railway passenger-cars of them. The English railway-cars are still much like several stage-coaches combined in a long carriage, each being a separate room of itself. These cars, as well as those in use in America, are very elegantly furnished. When the first passenger-cars were placed on the Stockton and Darlington road, the travelers bought their seats, and their names were entered on the passengers' list. But instead of there being "nobody to travel behind a locomotive," everybody wanted to ride in that way, and it was soon found that no list of passengers could be kept; thus tickets came into use.

In these very early days of railway travel the passenger-cars were like the old stage-coaches in another respect,—a trumpeter accompanied each train and blew his bugle until the cars were out of the depot and through the town. It was not until the bell and steam-whistle came into use that the trumpeter and his horn were abolished.

It is only about fifty years since this first locomotive puffed along the first railway, dragging this first clumsy passenger-car. During each of those fifty years more than two thousand miles of rails have been laid, and in England and the United States every day of those fifty years has seen the completion of one locomotive and two passenger-cars. Immense workshops are kept busy building locomotives and cars. They are generally near the principal depots of the great railway lines, and I know of no more interesting place where one can spend a part of his day in the depot. Each and every part of a locomotive must be made with the greatest precision and delicacy, and great

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machines are employed for hammering and cutting and punching and planing the iron into shape. You will find in these railway works, as the English say, or "locomotive works," as they are called in America, immense machines, possessing almost resistless power, yet driving only a little steel-pointed instrument like a chisel not bigger than one's little finger. It seems almost a waste of power to use such a giant to drive so slight a tool. But this delicate chisel digs its way little by little through the hardest of cold iron or steel, and planes it as smooth as ever the carpenter's plane trims wood, and it produces, too, shavings of iron as delicate as

STEPHENSON RUNNING HIS OWN ENGINE.

those of soft pine. Little shears, hardly bigger than a tailor's, cut through iron as easily as through paper; and delicate steel punches drive their way through iron plates. In most of these works you will see also the Nasmyth steam-hammer, a mighty giant in power, but as docile as a lamb under the touch of a master hand. It is an immense shaft of iron, sliding up and down in a great wooden frame, and regulated in its movements so that it can strike a hard or soft, a quick or slow blow, as the engineer who directs it may wish. A heated shaft of iron a foot thick can be crushed, or a tack may be driven, by its blows. About twenty years ago, the Prime Minister of England, Lord John Russell, visiting the railway works at Manchester, was invited to eat a boiled egg for luncheon. Before giving him the egg, the master of the works put it in a small wine-glass and placed both under the great steam-hammer. The engineer set the giant at work; down rushed the shaft with the rapidity of a lightning flash and struck the egg, but so perfectly was the hammer regulated that the blow merely chipped the shell, crushing neither glass nor egg.

Among the first results of the success of the railway was the stop which was put to the digging of canals. Tens of thousands of men had been employed in Great Britain in canal-digging; they were known as "navigators," but called "navvies" for short. These, thinking their work would be gone if railroads succeeded, made great efforts to oppose them. But it was soon found that the digging of deep railway cuts, the building of great bridges, and the boring of long tunnels, gave employment to more men than canal digging, and the navvies at once became railway builders. One-half of the great Pacific Railway—the Mississippi side—was built by Irish navvies; the other half—on the Pacific side of the Rocky Mountains—was mainly the work of Chinamen, who were brought over from China by the ship-load to work on the railroad, although they had never seen one in their lives. The English navvies were a curious class twenty-five or thirty years ago. They went about from road to road in gangs of ten or twelve, with a headman or captain, who made bargains or contracts, and under whose direction they worked. They generally built at each point where they found employment a mud house, roofed with tufts of grass, in which the whole gang ate and slept, doing hard work and living hard lives. When a lazy fellow attached himself to the gang and shirked work, the others beat and cast him out, refusing him a share of the profits of the work. Along railroads nowadays the workmen build entire villages of log or slab huts, which they leave standing when they go away. Those who lay the track live in cars fitted up for sleeping and cooking, and called "caboose" or "construction trains." When the Pacific Railway was being built, the twenty thousand workmen on the Plains removed their villages from place to place every week; for on that road a rail was laid every fifteen seconds, and over a mile of track was completed during every hour of track-laying.

There were workmen on the Pacific Railway even more curious than the Irish or Chinese navvies. During the Summer of 1868, the Laramie River became very low, much to the distress of a contractor who had cut a great many thousand crossties—the timbers on which the rails are laid—and which he expected to float down to the point where the railroad was to cross. He was at first at a loss to know what to do, but resolved, finally, to build

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dams across the river at various points, and, when the stream was thus made high enough, set his rafts afloat. Large parties of men, therefore, went to work building the dams. No sooner would the men leave off work at night, than thousands of beavers would begin, and work hard at the dam during the whole night.

Water is always as necessary to the comfort of beavers as on this occasion it was to the welfare of the contractor; and it was probably for this reason, and not because they wished to see the railroad finished, that the beaver community joined in the labor of building the dams.

Near every large depot at the end of a line of railway, but not at the small stations along the route, you will find a curious workshop, different from the "locomotive works," and hardly less interesting. It is always circular or semicircular in shape, and for this reason is called the "round-house." In the early days of railroads, the repair-shop—which the round-house really and simply is—was called "the hospital." It is not a name without meaning, for to the round-house, as to an hospital, the "iron horses" who may have been worn out in service, with broken limbs or wheezy lungs, are sent to be "doctored," as the engineers say—or "repaired," as we would call it. In the center of the round-house is always a movable table, large and strong enough to hold the biggest and heaviest locomotive. It is called a turn-table. Across its diameter run two rails; and from its outer edge or circumference run other rails to all parts of the round-house, spreading from the table like the spokes of a wheel from its hub. The disabled locomotives are run into this hospital, and upon the turn-table, which is then turned until the locomotive can be run upon the side-tracks, to be taken to pieces, repaired, painted and polished up, then to come forth renewed for the race again.

A train of cars is in some respects like a ship. The engineer or driver of the engine is the pilot, the brakemen are the crew, and the conductor is the captain of the craft. But these are not all the persons necessary to the work. Of equal importance to the safe running of every train are the guides—the signal-men and switch-tenders. These are not only among the most important, but the most interesting of the servants of the locomotive. On all well-regulated railways the signal-men and switch-tenders are stationed at every depot, switch, crossing, bridge and tunnel; and on all roads in Europe, and on several in this country, guards are stationed at every mile-post. There are patrols who pass over the road—each taking a mile of it as his beat—just before a train is to pass, and examine every foot of the track, looking for loose bolts and broken rails, and removing little stones from the track. These patrols and the signal and switch men are armed during the day-time with flags, which they wave as a direction to the engineer of the train. At night they use colored lamps, which can be seen for many hundreds of yards; and great calcium lights, which are visible for many miles.

It is not at the ends of a great railroad that the switch-tenders and signal-men are to be seen in their greatest activity, but at some point where several tracks cross each other. At Newark, New Jersey, near the city of New York, two great lines of railway cross, each having a double track. Trains on these roads are so numerous that they pass each other at this place every ten minutes in the day and night. You would naturally suppose that the switch-men were kept very busy; they are constantly at their posts and on the look-out, but the labor, though responsible, is not hard. A single signal-man in a small station-house directs the trains, regulating their coming and going, and their speed, with his flag, which is moved by machinery.

At the Clapham Junction, near London, 700 trains pass daily,—that is one every two minutes and a-half,—so rapidly, indeed, that it looks to a stranger as if one continuous train was passing, and then flying off in different directions. Yet it is all done, day after day, without noise or confusion to these signal and switch men, who control the movements of the trains. Here one signal-man directs the whole (there is a small army of switch-tenders), and he does it by an instrument called a signal-box, on which he plays as on a great piano.

The signal-box used in England is an elevated tower, which overlooks the railway for several hundred yards around the depots. In the top of it are the handles of the various signals, some of which may be more than a mile distant. In some of the boxes there are as many as seventy handles, each connecting with a signal-flag or post at greater or less distance, and each near a switch, by the side of which there always stands a switch-tender, who is guided in all he does by the signal-master in the signal-box. By pulling a handle of his box, the signal-master displays a flag or lantern; the switch-tender, at the point where the signal is set, knows its meaning, and alters his switch to agree with it; the engineer of the approaching train also reads the signal, and dashes ahead or stops as it directs him. If it were not for the signal-master in his box, the trains at these busy stations would become confused and block the way.

But the quickest and safest of the agents which direct the running of trains is one you never see nor hear. He does his work swiftly and silently. He runs ahead of each train and keeps the track clear, and when accidents occur, it is generally

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found that it is because he is disabled or neglectful of his duty. His name, as you will guess, is The Telegraph. Every railroad has its telegraph line, and at every station an operator to mark the principal movements of the trains. In this way the trains are prevented from overtaking or running into each other. The telegraph is the signal-agent who does this; and no matter how fast the trains may run, electricity will outstrip them.

Not the least interesting feature of a depot, as you will find if you spend a day in one, is the difference in the character of the trains. You will find trains for day and trains for night travel; fast trains, making few stoppages, for persons going great distances, and called "express" trains; and slower trains, making many stops, for the convenience of persons going only a short distance, and called "accommodation" trains. Then there are various kinds of freight trains, such as cattle and hog trains; and on all the roads near great cities like Boston, New York and Philadelphia, there are even milk and egg trains. These reach the cities at an early hour of the morning, with the fresh milk and eggs collected the evening before in the country, that they may be distributed by the milk-men and grocers at their customers' doors before breakfast. It is only fifteen or twenty years ago that most of the milk used in large cities was obtained from cows fed in city pens, instead of in wide, green pastures of the country; and then it was the "cow with the iron tail," as the old-fashioned pumps were called, that gave the most of the supply. Now, long trains of cars, loaded with great tin cans or jars almost large enough to drown one in, carry to the cities the best milk of the finest cows in the richest meadows of the country.

Trains are now run at about the rate of forty miles an hour,—sometimes much faster, and generally somewhat slower. The fastest trains in England run at sixty miles an hour. To run at this rate, the piston or driving-rod of the locomotive must travel at the speed of 800 feet per minute, or so rapidly that it cannot be seen to move at all. George Stephenson, the first to claim that the locomotive could run at twelve miles an hour, was called insane until he proved it. It was but a few years after this that prominent engineers said that railway trains could be regularly run at the rate of 100 miles an hour; and Stephenson was again called insane because he said that fifty miles an hour was as fast as trains could be regularly and safely run. But it is now discovered that he was nearly right, and locomotive-makers are no longer building engines to run faster than at this rate. But they are trying, instead, to save the time lost in taking coal and water for supplying the engines.

On some lines a long open trough, forty feet long, is laid between the rails. This is filled with water. As the locomotive passes at the speed of fifty miles an hour, a pipe or scoop is lowered from it into this trough; the water is thus dipped up and placed in the water-box for use by the engine. Another invention is a huge box raised above the road and filled with coal. As the locomotive passes, it touches a spring, the box turns instantly upside down, and the coal drops into the tender, which runs behind the locomotive. The time which is thus saved will of course make the trips shorter, without calling for an increase of speed. It may be that when you are grown, railway trains will not be run any faster than they are now; but, in spite of what George Stephenson has prophesied, I suspect some future American engineer, who is now a boy, will find means of running them twice as fast as they are now run, and I hope with greater safety to the passengers.

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The bags, worn and dusty, around her were tossed
Unheeded, forgotten—in dreams she was lost.
One hand propped her forehead, half hid by her hair,
While the other held tightly a fairy-book rare.
O the wonderful pictures! the glories untold!
That arose on her vision, all glitt'ring with gold!
The brown rafters vanished, and vanished the hoard
Of cast-offs and may-wants her mother had stored;
Dried bunches of herbs, old clothes past repair,
Heaps of carpet rags, saddle bags, spider-webbed stair.

In their place was a ceiling, resplendent and high,
All studded with stars, and as blue as the sky.
Around it hung banners, and garlands so gay!
And wax-lights made everything bright as the day;
While strains of sweet music came soft on the air,
And light feet were dancing right joyously there.
O the beautiful ladies! that swept through the rooms,
With dresses like rainbows, and high nodding plumes.
And the princes and lords, all in gallant attire,
How they danced as the music rose higher and higher!
Then the fair Cinderella,—a lady at last!
With the Prince so resplendent, tripped smilingly past.
O the exquisite story! it held her in thrall,
As she poured o'er the scenes of that wonderful ball;
Her red lips half parted with joy and surprise,
While beaming and dancing with light were her eyes.

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Hist! a step on the stair—her dreaming is o'er!
As "Dorothy!" comes through the half-opened door,
She starts as though guilty, poor child! of a sin,
And down goes the chest-lid, her treasure within.
"Yes, mother, I'm coming!" and smiling she goes
Down the worm-eaten stairs—to be scolded, she knows.
But chide her and scold her as long as they may,
Still that beautiful vision hath Dorothy Grey.

FRANK AND THE TOAD.

By Cyrus Cobb.

THERE was a little boy named Frank. He was a noble little fellow, but now and then he would forget what his good mother had told him. One day he was playing in the back-yard, when he discovered a toad hopping through the grass. The sight of this toad seemed to amuse him very much. He jumped about him laughing and chuckling in such a manner, that the poor reptile presently stopped in his way, and with an air of much humility waited to see what would come next.

Now Frank was n't a cruel boy, but like most little boys he was apt to be thoughtless. When the toad stood still, he cried out to it, "Go 'long! go 'long, or me whip you!" at the same time flourishing a stick with which he had been playing. But the toad did not move; so what did our boy do but bring the stick down upon its back with such force that it gave a hop of pain.

Then occurred something exceedingly amazing.

Looking up into the boy's face, the toad opened its mouth and said,

"My little man, you ought not to have done that."

Frank, who had never heard an animal speak before, started back with his stick held aloft, his eyes staring, and his mouth wide open.

The toad never for a moment withdrew its own bright eye from Frank's, but seemed to penetrate his heart with its glance.

Presently a kitten crept out from a great hole under the rear of the house, and being struck by so odd a picture, approached, and with a sort of introductory cough, followed by a little mew, exclaimed: "What 's the matter?"

Frank was well nigh petrified by this speech on the part of the kitten, and all the motion he made was to turn one of his wide-open eyes toward the new speaker, while the other seemed still held by the toad's glance.

"Frank just did a wicked turn," said the toad, without removing its glance from the boy.

"How so?" asked the kitten.

"He struck me a hard blow with that stick,

THE TOAD TELLS THE KITTEN.

which you see him holding in the air," returned the toad.

At this instant a mouse put out its head from a small hole under the house.

Kitty's fur began to rise at this, and she gave a growl, and she spit a little too. But somehow there seemed to be an extraordinary influence about, for the mouse paid no attention to these threatening signs from Miss Grimalkin, but out it

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"'O, HO!' CRIED THE MOUSE."

came, and running up to the group, squeaked: "What does all this mean?"

Pussy, whose impulse to eat up the mouse seemed to pass away, replied:

"This naughty little fellow has just now given a hard blow on friend Toad's back with that stick."

"O, ho!" cried the mouse, "what 's best to be done with him?"

"To Judge Ox," said the toad; and nodding its head to Frank, it hopped toward the gate, still keeping its bright eye on our little boy.

Frank moved after the toad as if something drew him that he could n't resist. The kitten and the mouse fell in behind, making a sort of rear guard to this strange procession.

The toad led the way into a field near by, in which an ox was grazing. As the train approached, the ox raised his head, and awaited their arrival with the utmost gravity.

When within about a yard of the ox, the toad said:

"Your honor, I have just been struck in a grievous manner by this little boy."

"Assault and battery with intent to kill," uttered the ox in a deep voice, at the same time turning a calm, dignified glance on Frank. "Let him be considered under arrest without more ado."

Frank began now to tremble violently.

"Let the case be presented to the grand jury immediately," continued the ox. "We do not delay," he added, with a severe look, "as men are wont to do."

A grasshopper, heretofore unobserved, now stepped forward, carrying a staff, which was only a straw, and led the toad, the kitten and the mouse

THE TOAD TELLS THE OX.

GOING TO JUDGE OX.

away. Frank watched them furtively until they were out of sight, and then, on a motion from the ox, he sat down on a stone, while a grandfather-longlegs held him in custody.

The grasshopper led the toad, the kitten, and the mouse to a secluded spot, where sat twenty-three beetles, who composed the grand jury, and in the midst of them was a ram, who was the district attorney.

What passed here it would be improper for us to tell, for grand juries are very secret in their doings. It did leak out, however, that the kitten and mouse testified that they saw the blow given by Frank. They probably thought they did, but they did n't, which my little readers will find to be like a good deal of evidence that is given in the courts.

To make the story short, an indictment was

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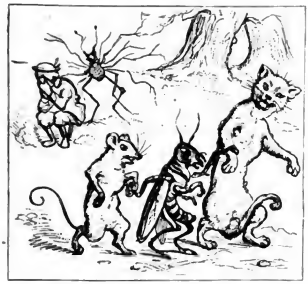
found by this grand jury against our little boy, and duly presented.

The ox now stopped chewing a cud he had in his



THE GRASSHOPPER LEADS AWAY THE WITNESSES.

mouth, and again declared that he could permit no delays such as were indulged in by men.

"Choose," said he to poor Frank, "whom you would have for counsel."

Our little boy did n't understand what the ox meant by this speech; but Grandfather-Longlegs explained that as he must be put on trial for the ox to find out whether he was guilty or not, he certainly needed some one to work and talk for him as counsel.

At that moment, Frank, who was all of a flutter, heard a bleating calf just coming on the ground; and thinking him a fine talker, he declared to the court, in a voice that was almost inaudible, that he would take this calf to be his counsel.

The ox bowed to the calf, and so did the ram, who you know was the district attorney, and therefore, as counsel for government, was to contend against the calf. A jury of twelve frogs was impaneled, and the indictment was read, setting forth in very learned terms that Frank had assaulted the toad *vi et armis*, &c., maliciously and feloniously, with intent to kill. To all this Frank, under the instructions of his counsel, pleaded "Not guilty," and the trial commenced, the process being a little different from the course in some of the courts of men.

Alas for poor Frank! at the very first objection put in by his counsel, with a very loud voice, the ram bent both his brows and his head with such a terrible air, that the calf, losing all presence of mind, blurted out something nobody could understand, and ingloriously turned tail and ran for a clump of bushes near by.

The ram made a dash for him, but the ox commanded him to return to his place; and then, in great disgust at the conduct of the calf, he asked the prisoner in a severe voice if he had anything to offer in his defense.

Poor Frank was so terrified by the flight of the calf, the severe look of the ox, and the threatening horns of the ram, that he could not say a word, and so the ox said he could waste no more time. The case was given to the jury on the evidence of the toad, and they returned a verdict of "Guilty" without leaving their seats.

Frank now thought something terrible was coming, and nearly fainted away. But Judge Ox bade Grandfather-Longlegs to help him stand up for sentence; then a kindly smile stole over his sober look, and this is the sentence he pronounced:

"The prisoner is sentenced to think over every night, when he goes to bed, how often he has been cruel to animals of any kind; and when he recollects of abusing any, even if it be but a fly, to say to himself, 'I 'm very sorry, and will try very hard not to do so again.'"

"O!" cried Frank, gaining courage, "I will do that! I will do that!"

Then the ox nodded his head, and Frank was led back home by Grandfather-Longlegs and the ram, the toad, the kitten and the mouse following behind. When they arrived at the house the ram and Grandfather-Longlegs made a bow and left, the toad hopped into the yard, and the kitten and

THE TRIAL.

mouse made for their holes. But just as the mouse was going into his, pussy made a dart for him. Mousey was too quick for her, however, for giving

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his tail a whisk almost in pussy's face, he ran into his hole safe and sound.

As for Frank, the lesson impressed upon him in so wonderful a way had such an excellent effect, and he kept his promise to Judge Ox so well, that the Society for the Prevention of Cruelty to Animals took occasion, not long afterward, to mention him with honor.

SANDY, THE HUNCHBACK.

BY AMALIE LA FORGE.

AT the far end of the one little straggling street of the village of Glenburn, lived the widow MacPherson and her son "Sandy, the hunchback," as he was always called by the neighbors. At the other end stood the little kirk, under whose shadow lay her husband and five children; and now this one cripple boy was all that was left to remind her of long years of toil and loving service. Of all the bonnie lads and lasses, there remained but one—her poor deformed child. But the faithful mother's heart went out to him in double love and tenderness, and longed to shield him from every jeer and mocking laugh that stung his sensitive soul.

Sandy was no ideal character such as is often found in books, whose bodily deformity was more than balanced by the beauty of his face or the brilliancy of his genius. No, Sandy was not formed to be a hero of romance; he was only a shrewd Scotch boy, whose wits were exercised more than would have been the case had he been able to race over the moor, or wade the brooks fishing for trout, or climb the heathery sides of the hills after birds' nests, as did his more fortunate companions.

His round, freckled face was crowned by a shock of light hair, and his bright blue eyes were more keen than beautiful. However, to his mother he was all in all; and, to do him justice, his love for her was unbounded. He helped to cultivate her little patch of garden, hobbling about on his crutch, and he also contrived to eke out their scanty income by plaiting straw into mats and little fancy baskets, which found sale during the Summer months, when the neighboring town was much frequented by tourists, who were glad to carry away pretty mementos of their visit to the rugged Scottish hills.

To most of the simple villagers Sandy was an object of compassion, and also a quiet sort of liking.

"He 's a douce lad," one gossip would say to another; "but eh! my he'rt 's just sair for his puir mither."

And "douce" Sandy generally was, unless when his naturally quiet temper was aggravated by taunts or mocking allusions to his misfortune, and then his hands would clench themselves hard together, and his blue eyes blaze into sudden wrath,—while, like any other wounded animal, he would hobble as swiftly as possible to his lowly home, sure of shelter and a loving welcome there.

"Eh, mither, what ha'e I dune," he would say sometimes, "that I s'uld be made sic a deformity?"

Then his mother would take his hand gently in hers, stroking it softly as she said:

"It 's the Lord's will, my lamb, an' ye must just bear it, for His sake."

"But it 's no richt o' Him," he answered once, "to mak' a body sae, an' then no' keep ithers frae flytin' them. I 'd rather dee an' ha'e dune wi' it."

Then the tears rolled suddenly down the pale, patient face of his mother.

"Oh, my bonnie lamb, ye maunna' say sic things; ye brak' my he'rt wi' yer wull words. An' eh! Sanny, to think ye 'd like to dee an' leave yer puir auld minny, that wad just spill ilka drap o' her he'rt's bluid for ye gin it war ony guid!"

"Weel, weel, mither, I winna dee gin I can help it," Sandy answered with a queer grimace; "but I canna' see why ye s'uld be sae ower fond o' sic a crooked stick."

"Eh, Sandy, ye 're no' a mither," said the widow, with a tearful smile; and as she moved about her work, she would pause often to give a nod or a word to Sandy, who sat whistling at his work under the old gnarled apple-tree which shaded the door.

To do them justice, the boys in the village were almost all of them ready to render Sandy any help they could, as he made his toilsome way about the place, or in his expeditions after the mosses and lichens with which he filled the baskets which he

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neither wood nor crackers, on account of some plaguy fellers and their chowder! No, by sixty!" said Joe, "I would n't be so mean!"

"It looks naked and gloomy enough in here!" said Augustus, as they entered.

"It would n't seem so bad, though, to wet and hungry sailors, some wild night in Janewary, after they 'd been cast away," said Joe. "Just imagine 'em crawlin' in here out of the rain and cold, and startin' up a good, nice fire in the chimbly, and settin' down afore it, eatin' the crackers!"

"How are the provisions supplied?"

"Oh, one of the Humane Society's boats comes around here once in a while, and leaves things. I don't believe but what it would be fun to live here," Joe added, romantically, "like Robinson Crusoe and his Man Friday."

"Suppose we try it?" said Mr. Bonwig. "I'll be Crusoe, and you may be t'other fellow."

"And we 'll shoot ducks for a livin'!" said Friday. "Come on, Mr. Crusoe!"

They left the hut, and went in pursuit of game, little thinking that accident might soon compel them to commence living the life that was so pleasant to joke about, more in earnest than either dreamed of doing now. But the story of how that came to pass will have to be related in another number.

THE DEAD DOLL.

By Margaret Vandegrift.

You need n't be trying to comfort me—I tell you my dolly is dead!
There 's no use in saying she is n't, with a crack like that in her head.
It 's just like you said it would n't hurt much to have my tooth out, that day;
And then, when the man 'most pulled my head off, you had n't a word to say.

And I guess you must think I 'm a baby, when you say you can mend it with glue!
As if I did n't know better than that! Why, just suppose it was you?
You might make her *look* all mended—but what do I care for looks?
Why, glue 's for chairs and tables, and toys, and the backs of books!

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My dolly! my own little daughter! Oh, but it 's the awfulest crack!
It just makes me sick to think of the sound when her poor head went whack
Against that horrible brass thing that holds up the little shelf.
Now, Nursey, what makes you remind me? I know that I did it myself!

I think you must be crazy—you 'll get her another head!
What good would forty heads do her? I tell you my dolly is dead!
And to think I had n't quite finished her elegant new Spring hat!
And I took a sweet ribbon of hers last night to tie on that horrid cat!

When my mamma gave me that ribbon—I was playing out in the yard—
She said to me, most expressly, "Here 's a ribbon for Hildegarde."
And I went and put it on Tabby, and Hildegarde saw me do it;
But I said to myself, "Oh, never mind, I don't believe she knew it!"

"AND HILDEGARDE SAW ME DO IT."

But I know that she knew it now, and I just believe, I do,
That her poor little heart was broken, and so her head broke too.
Oh, my baby! my little baby! I wish *my* head had been hit!
For I 've hit it over and over, and it has n't cracked a bit.

But since the darling *is* dead, she 'll want to be buried, of course;
We will take my little wagon, Nurse, and you shall be the horse;
And I 'll walk behind and cry; and we 'll put her in this, you see—
This dear little box—and we 'll bury her then under the maple-tree.

And papa will make me a tombstone, like the one he made for my bird;
And he 'll put what I tell him on it—yes, every single word!
I shall say: "Here lies Hildegarde, a beautiful doll, who is dead;
She died of a broken heart, and a dreadful crack in her head."

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correctly my questions three, and thou shalt save both thy life and thy livings.

Shepherd. Well, my liege, but to answer correctly I must speak the truth.

King. And thou shalt. Now tell me how much I am worth, and that within a single penny.

Shepherd. Twenty-nine pence. Judas betrayed his Lord for thirty; and since thou art willing to betray the Church, I think that thou must be one penny the worse than he.

King [*laughing*]. Why, why, my Father Abbot, I did not think that I was worth so little! And now, jolly priest, tell me just how long it would take me to ride around the world.

Shepherd. You must rise with the sun, and ride with the same until it riseth on the next morning, when you will have ridden the circuit of the world in just twenty-four hours.

King [*laughing*]. I did not think I could do it so soon. But now comes the question that will put thy wits to the test. What do I think?

Shepherd. You think I am the Abbot of Canterbury, but I am not. I am a poor shepherd, and that you may see [*throwing off his cloak*], and I have come to beg pardon for the Abbot and myself.

King [*laughing heartily*]. And thou shalt have it. Tell the Abbot that thou hast brought him a full and free pardon from the King. And as for thyself, I will give thee four nobles each week, for the merry jest thou hast shown me.

[*Curtain drops.*]

GOING TO LONDON.

UP, down! Up, down!
All the way to London town—
Here we go with baby!
I 'm the papa,
You 're the ma'ma,
You 're the pretty lady!

Up, down! Up, down!
All the way to London town—
See how fast we 're going!
Feel the jar
Of the car?
Feel the wind a-blowing?

Up, down! Up, down!
All the way to London town—
Here we are this minute!
Rock a chair
Anywhere,
When we two are in it

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"WHAT DOES THIS MEAN, SIR?"

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own greed for gain; how it made him hard and uncharitable, and he tried to put away all evil thoughts and to think of the hymn, "Now the woods are all reposing," lest the little old man should appear.

A little past midnight he fell into a troubled sleep, and his mind began to wander over his schemes for gain. He was dreaming of the good bargain he had made, or expected to make, when he was startled by a noise close by. He raised himself in bed, and saw the little old man in the moonlight, moving about the room. The merchant at first looked upon him with a feeling of curiosity rather than alarm or anger, and while he did so, all was well. But he at last became irritable under the disturbance, and, when the little old man at last approached the bed, Berthold's irritability kindled into anger, and wicked thoughts began to fill his mind, and he found it hard to restrain his lips from wicked words.

At last, the little old man touched the portmanteau containing the merchant's treasures. This was too much. The merchant's caution forsook him, and he was filled with rage.

"Back! you vile robber! back, from my bag-gage!" he exclaimed, seizing his pistols. The little old man started back, as in terror. He seemed to be in an agony of prayer. A change seemed coming over him. He appeared conscious of it, and, going toward the door, disappeared.

Berthold gazed after him and then remembered the collier's admonition in regard to the danger of evil thoughts. He wished that he had acted differently, for he wished to bring no evil on the family.

There was a sound at the latch; the door opened, when an evil-looking giant, wearing a red mantle,

"HE THREW A LOOK OF FEARFUL WILDNESS UPON BERTHOLD."

appeared. He laughed wildly, and said: "I begin to be free again. You have made me *grow!*"

Berthold saw that the giant was none other than the little old man.

The merchant leaped from his bed and discharged his pistol. The giant vanished, growing taller and more fearful as he disappeared.

In a moment, the collier hurried up the stairs.

"In the name of God," said he, rushing into the room, "what have you been doing to our house-spirit?"

"House-spirit!" said Berthold, like one in a dream. "What do you mean?"

"He has just gone out of the house," said the

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But Piccola never doubted at all
That something beautiful must befall
Every child upon Christmas-day,
And so she slept till the dawn was gray.

And full of faith, when at last she woke,
She stole to her shoe as the morning broke;
Such sounds of gladness filled all the air,
'T was plain St. Nicholas had been there!

In rushed Piccola sweet, half wild—
Never was seen such a joyful child.
"See what the good saint brought!" she cried,
And mother and father must peep inside.

Now such a story who ever heard?
There was a little shivering bird!
A sparrow, that in at the window flew,
Had crept into Piccola's tiny shoe!

"How good poor Piccola must have been!"
She cried, as happy as any queen,
While the starving sparrow she fed and warmed,
And danced with rapture, she was so charmed.

Children, this story I tell to you,
Of Piccola sweet and her bird, is true.
In the far-off land of France, they say,
Still do they live to this very day.

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